Forestland Interpretations

Forestland interpretations are important to good management. The management of trees begins with an understanding of the soil where they grow or are to be grown. Some soils are very suitable for growing wood crops; others barely support tree cover. Different tree species may vary in production on the same soil.

Forestland interpretations should be used to assist land users in planning, installing, and maintaining forestland management systems.

Forest Management and Productivity

The Forestland Management and Productivity tables presents information about suitable for producing timber for each soil map unit. Management concerns, which include hand planting, mechanical planting, use of harvesting equipment, mechanical site preparation (surface), roads (natural surface), erosion on roads and trails, off-road/trail erosion, soil rutting, log landings, seedling survival, are listed by ratings of:

- Not Limited (0.00)
- Slightly Limited (0.01 to 0.30)
- Moderately Limited (0.31 to 0.60)
- Limited (0.61 to 0.99)
- Very Limited (1.00)

Information on potential productivity includes plant competition, common trees, site index, productivity class, and trees to plant.

Management Concerns

PLANT COMPETITION - A rating of slight indicates little or no competition from other plants; moderate indicates that plant competition is expected to hinder the development of the fully stocked stand of desirable trees; and severe means that plant competition is expected to prevent the establishment of a desirable stand unless the site is intensively prepared, weeded, or otherwise managed for the control of undesirable plants.

POTENTIAL PRODUCTIVITY - This is discussed under the ordination class symbol.

COMMON TREES - Trees that generally occur on the soil are listed regardless of economic importance.

SITE INDEX AND PRODUCTIVITY CLASS - These are discussed under ordination class symbol.

TREES TO PLANT - Trees that are suitable for commercial wood production and that are adapted to the soil.

HAND PLANTING – ratings are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, a water table, and ponding. Ratings indicate the expected difficulty of hand planting, which includes the proper placement of root systems of tree seedlings to a depth of up to 12 inches, using standard hand planting tools. It is assumed that necessary site preparation is completed before seedlings are planted.

MECHANICAL PLANTING – ratings are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, a water table, and ponding. Ratings indicate the expected difficulty using a mechanical planter, which includes proper placement of root systems of tree seedlings to a depth up to 12 inches. It is assumed that necessary site preparation is completed before seedlings are planted.

USE OF HARVEST EQUIPMENT – ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, a water table, and ponding. Ratings indicate the suitability for operating harvest equipment for off –road transport or harvest of logs and/or wood products by ground-based wheeled or tracked equipment.

MECHANICAL SITE PREPARATION (SURFACE) – ratings are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, a water table, and ponding. The part of the soil from the surface to a depth of about 12 inches is considered in the ratings. Ratings indicate the suitability of using surface-altering soil tillage equipment to prepare the site for planting or seeding.

ROADS (NATURAL SURFACE) – ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads on which trucks transport logs and other wood products from the site.

EROSION (ROAD/TRAIL) – ratings are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails.

EROSION (OFF-ROAD/OFF-TRAIL) – ratings are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance.

SOIL RUTTING – ratings are based on a water table, rock fragments on or below the surface, surface texture, depth to a restrictive layer, and slope. Ratings indicate the hazard or risk of ruts in the uppermost soil surface layers by operation of forest equipment. Soil displacement and puddling (soil deformation and compaction) may occur simultaneously with rutting.

LOG LANDINGS – ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, a water table, ponding, flooding, and the hazard of soil slippage. Ratings indicate the suitability of the soil at the forest site to serve as a log landing and allows the efficient and effective use of equipment for the temporary storage and handling of logs.

SEEDLING SURVIVAL – ratings are based on flooding, ponding, a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. Ratings indicate the impact of soil, physiographic, and climatic conditions on the survivability of newly established tree seedlings.

See the National Forestry Manual, Subpart B for criteria used in rating management concerns.

This subsection includes:

- **(a) Forest Management (one or two tables)**

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
Br:				
Bremer	eastern cottonwood	90	100	American sycamore, arborvitae, common hackberry, eastern cottonwood, green ash, silver maple
	silver maple	80	29	
Ca:				
Carlow	eastern cottonwood	85	86	baldcypress, eastern cottonwood, green ash, pecan, pin oak, silver maple, sweetgum, willow oak
	pin oak	75	57	
Ch:				
Chariton	---	---	---	---
Ed:				
Edina	---	---	---	---
Fa:				
Fatima	black walnut	---	0	American sycamore, black oak, black walnut, eastern cottonwood, pecan, pin oak
	bur oak	---	0	
	pin oak	86	72	
Fr:				
Freeburg	white oak	65	43	black oak, eastern cottonwood, green ash, pecan, pin oak, tuliptree, white oak
GaC:				
Armstrong	northern red oak	55	43	European larch, eastern white pine, red pine, sugar maple
	white oak	55	43	
Gara	northern red oak	55	43	eastern white pine, northern red oak, red pine, white oak
	white oak	55	43	
GaD:				
Armstrong	northern red oak	55	43	European larch, eastern white pine, red pine, sugar maple
	white oak	55	43	
Gara	northern red oak	55	43	eastern white pine, northern red oak, red pine, white oak
	white oak	55	43	

Table E1.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
GcC3:				
Armstrong	northern red oak white oak	55 55	43 43	European larch, eastern white pine, red pine, sugar maple
Gara	northern red oak white oak	55 55	43 43	eastern white pine, red pine, white oak
GnB:				
Greenton	---	---	---	---
GnC:				
Greenton	---	---	---	---
GnD:				
Greenton	---	---	---	---
GrB:				
Grundy	---	---	---	---
GrC:				
Grundy	---	---	---	---
Gu:				
Gullied Land	---	---	---	---
HaB:				
Hatton	black oak white oak	61 56	43 43	Norway maple, black oak, bur oak, scarlet oak, white ash, white oak
HaC:				
Hatton	black oak white oak	61 56	43 43	Norway maple, black oak, bur oak, scarlet oak, white ash, white oak
Hn:				
Haynie	American sycamore black walnut eastern cottonwood green ash	110 --- 110 ---	157 0 157 0	black walnut, eastern cottonwood
Ho:				
Hodge	eastern cottonwood silver maple	110 105	157 57	eastern cottonwood, green ash, silver maple
KnC:				
Knox	northern red oak white oak	78 69	57 57	black walnut, eastern white pine, green ash, tuliptree

Table E1.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
KnD3:				
Knox	northern red oak	78	57	black walnut, eastern white pine, green ash, tuliptree
	white oak	69	57	
KnE3:				
Knox	northern red oak	78	57	black walnut, eastern white pine, green ash, tuliptree
	white oak	69	57	
LaB:				
Ladoga	northern red oak	75	57	European larch, black walnut, eastern white pine, northern red oak, red pine, sugar maple, white oak
	white oak	75	57	
LaC:				
Ladoga	northern red oak	75	57	European larch, black walnut, eastern white pine, northern red oak, red pine, sugar maple, white oak
	white oak	75	57	
Le:				
Leta	black willow	---	0	eastern cottonwood, green ash, pecan, silver maple, sweetgum
	eastern cottonwood	90	100	
LnE:				
Lindley	black oak	63	43	black oak, northern red oak, white oak
	northern red oak	61	43	
	white oak	56	43	
LrE3:				
Lindley	black oak	63	43	black oak, northern red oak, white oak
	northern red oak	61	43	
	white oak	56	43	
LsC:				
Keswick	northern red oak	55	43	eastern white pine, red pine, sugar maple
	white oak	55	43	
Lindley	black oak	63	43	black oak, northern red oak, white oak
	northern red oak	61	43	
	white oak	56	43	
LsD:				
Keswick	northern red oak	55	43	eastern white pine, red pine, sugar maple
	white oak	55	43	

Table E1.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
Lindley	black oak	63	43	black oak, northern red oak, white oak
	northern red oak	61	43	
	white oak	56	43	
LwD3:				
Lindley	black oak	63	43	black oak, northern red oak, white oak
	northern red oak	61	43	
	white oak	56	43	
Keswick	northern red oak	55	43	eastern white pine, red pine, sugar maple
	white oak	55	43	
M-W:				
Water	---	---	---	---
MaC:				
Mandeville	black oak	---	0	sweetgum, tuliptree, white ash, white oak
	black walnut	---	0	
	white oak	53	43	
MaD:				
Mandeville	black oak	---	0	sweetgum, tuliptree, white ash, white oak
	black walnut	---	0	
	white oak	53	43	
MaE:				
Mandeville	black oak	---	0	sweetgum, tuliptree, white ash, white oak
	black walnut	---	0	
	white oak	53	43	
MbD3:				
Mandeville	black oak	---	0	sweetgum, tuliptree, white ash, white oak
	black walnut	---	0	
	white oak	53	43	
Mc:				
Marion	post oak	---	0	black willow, eastern cottonwood, green ash, pin oak, silver maple, tuliptree, white oak
	white oak	50	29	
MhB:				
Marshall	---	---	---	---
MhC:				
Marshall	---	---	---	---
MkC:				
Mcgirk	white oak	55	43	eastern cottonwood, green ash, pecan, pin oak, sweetgum, white oak

Table E1.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
MnB:				
Menfro	black oak	73	57	black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak
	northern red oak	81	57	
	sugar maple	68	43	
	white ash	70	43	
	white oak	59	43	
MnC:				
Menfro	black oak	73	57	black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak
	northern red oak	81	57	
	sugar maple	68	43	
	white ash	70	43	
	white oak	59	43	
MnD:				
Menfro	black oak	73	57	black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak
	northern red oak	81	57	
	sugar maple	68	43	
	white ash	70	43	
	white oak	59	43	
MnD3:				
Menfro	black oak	73	57	black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak
	northern red oak	81	57	
	sugar maple	68	43	
	white ash	70	43	
	white oak	59	43	
MnE:				
Menfro	black oak	73	57	black walnut, eastern white pine, green ash, shortleaf pine, sugar maple, tuliptree, white oak
	northern red oak	81	57	
	sugar maple	68	43	
	white ash	70	43	
	white oak	59	43	
MoB:				
Mexico	---	---	---	---
Mu:				
Moniteau	pin oak	70	57	black willow, eastern cottonwood, green ash, pin oak, silver maple, sweetgum, white oak, willow oak
NaB:				
Napier	---	---	---	---

Table E1.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
Nd:				
Nodaway	---	---	---	---
NoE:				
Norris	black oak	---	0	eastern redcedar
	northern red oak	57	43	
	white oak	53	29	
Rock Land	---	---	---	---
PrB:				
Pershing	white oak	55	43	eastern white pine, red pine, white oak
PrC:				
Pershing	white oak	55	43	eastern white pine, red pine, white oak
Rw:				
Riverwash	---	---	---	---
Sa:				
Sarpy	eastern cottonwood	95	114	American sycamore, eastern cottonwood, silver maple
ShB:				
Sharpsburg	---	---	---	---
ShC:				
Sharpsburg	---	---	---	---
SM:				
Strip Mines	---	---	---	---
W:				
Water	---	---	---	---
WeB:				
Weller	white oak	55	43	black walnut, eastern white pine, red pine, sugar maple
WeC:				
Weller	white oak	55	43	black walnut, eastern white pine, red pine, sugar maple
WnB:				
Winfield	black oak	65	43	black oak, eastern white pine, green ash, northern red oak, tuliptree
	northern red oak	60	43	
	white oak	65	43	

Table E1.--Forest Productivity--Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
WnC:				
Winfield	black oak	65	43	black oak, eastern white pine, green ash, northern red oak, tuliptree
	northern red oak	60	43	
	white oak	65	43	
WnD:				
Winfield	black oak	65	43	black oak, eastern white pine, green ash, northern red oak, tuliptree
	northern red oak	60	43	
	white oak	65	43	
WnD3:				
Winfield	black oak	65	43	black oak, eastern white pine, green ash, northern red oak, tuliptree
	northern red oak	60	43	
	white oak	65	43	